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The role of urban waterfront parks on quality of life in İstanbul

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Abstract

Waterfronts or other natural resources contribute in a positive way to the quality of urban life. Parks located on the urban waterfronts can be defined as being both valuable and unique as they combine the natural settings of water source and green spaces to meet the physical and social needs of urban inhabitants. The aim of this research to emphasize the importance of natural areas for the life quality by focusing on the user preferences of the parks on urban waterfronts in Istanbul. The evaluation of the urban waterfront parks in the Istanbul Metropolitan Area is presented by empirical data on quality of life. A face-to-face interview was conducted within the scope of the data set consisting of 1635 residential units selected by a random sampling method. As a result, the reasons that shape the preferences for urban waterfront parks will be discussed and various suggestions will be presented to increase the use of waterfront parks in order to improve the quality of life in Istanbul.

Keywords
Waterfront parks, Recreation, Quality of life, İstanbul

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1.Introduction

It is commonly agreed that parks and green spaces are of importance when attempting to provide a better quality of life for an urbanized society. Individuals tend to relax mentally and physically when they are in contact with natural elements, and this can occur in various ways such as through recreational, social, cultural and physical activities in open spaces (Barton et al., 2000; Ritter, 1966; Carr et al., 1992; Czinki et al.,1966). By the time of the Industrial Revolution, according to Ritter (1966) urbanization had further raised the already high working populations of cities, and due to the destructive effects of longer working hours these cities were not able to provide any means of relaxation for their rapidly expanding urban societies. Therefore, parks and green spaces may be considered essential to relaxation and mental restoration. A study by Kuo and Sullivan (2001) presents the empirical evidence of the positive functions of green areas that shows the residents living in "greener" surroundings reported lower levels of fear and demonstrate less aggressive and less violent behavior. Additionally, the visual quality of urban parks and green spaces is a critical issue to support the positive impacts of these environment that even highly urbanized areas with a better visual quality may reduce stress and provide a sense of peace and tranquility for their users (Ulrich, 1981; Kaplan, 1983). Within this framework, parks located on the urban waterfronts may be defined as being both valuable and unique as they combine the natural settings of water source and green spaces to meet the physical and social needs of urban inhabitants.

Water is a natural asset, and an urban waterfront is the open space located along a water source such as a sea, river, canal or lake. Azeo Torre in Urban Waterfronts (1989) points out that: 'It is at the edge that man is at his best, that life is most vibrant. It is the lure of water, its spell, its reflection, its endless movement and change, that best captures man's imagination and provides a variety of applications from business to recreation, from calm to passive activities, the water's edge is where life is most diverse and unique' (Falk, 2003). Since water itself provides a variety of opportunities, it caused the development of various uses and activities on the urban waterfronts.

There are distinct approaches to classify the uses and activities carried out on waterfront areas, including parks and green spaces. Smith and Fagence (1995) distinguish waterfront parks as having water-independent uses, which are those neither dependent on, nor directly related to their water edge locations. Breen and Rigby (2003), in their pioneering work 'The New Waterfront', established a system of classification depending on the main functions of waterfronts. It includes recreational, residential, commercial, historical, cultural, service and environmental areas that recreational uses comprise parks, walkways and open gathering spaces along the water. In this case, waterfront parks are distinctive combinations of natural elements, built works, physical, social and cultural activities. Their positive image and visual attraction of water can contribute to the spatial quality of a given area, while providing places to improve socialization and health by promoting a better quality of life.

This study aims to demonstrate the contribution of urban waterfront parks to the quality of life considering the resident's preference ratio of waterfront parks in Istanbul. Specifically, the relation between the socio-economic characteristics of waterfront park users and their preferences are going to be asset by the following research questions: Are the waterfront parks highly visited among whole parks all across the city? Which waterfront parks are preferred more than the others? Which waterfront parks are preferred by residents of which parts of the city?

2. Contribution of urban waterfront parks to quality of life

The negative effects of urban life such as weak space quality, pollution, traffic congestion, lack of access to services and lack of social cohesion had to be balanced, and the class of activity used to achieve this was termed "recreation". Czinki et al. (1966) defines it as; time spent to regain a "human" psychological and physical condition.

Figure 1-2. *Brooklyn waterfront. (Photo: Ümit Yılmaz)*

Therefore, it is important to provide open areas in the city that people can use for short-term purposes, such as eating lunch or resting, and which can also be used in the long-term for activities such as exercising (Carr et al., 1992). A survey of visitors to Vondelpark, one of the most popular parks in Amsterdam, was conducted to collect data regarding the motives of its visitors. These were given as: to play sport, to meet others, to play with children, to walk the dog, to listen and observe nature, to contemplate and meditate, and to get artistic inspiration, as well as other undefined responses. The analysis of people's motives to visit nature shows that "to relax" is most frequently mentioned (Chiesura, 2003). The results emphasize the importance of parks regarding interrelated physiological and psychological needs of people.

Specifically, natural areas on the waterfronts such as parks provide a distinctive ground for relaxation where the water source and green elements meet. Additionally, these spaces support the water-related recreational activities such as watching the water view, walking along water, swimming, canoeing or fishing. However, the waterfronts serve to the recreational purposes, they have been far more commonly used for transportation, production and economic activities throughout the history. During the 19th century, waterfronts became vast infrastructures of large-scale developments for industrial production that destroyed the relationship between the city and the water. Following the post-industrialization period, these areas were abandoned and turned into brownfields. Starting in the 1980s they became urban development areas with efforts to integrate them into the city (Marshall, 2001; Bruttomesso, 1999; Hoyle, 1992; Meyer, 1999). Today, cities across the world are striving to achieve similar objectives by utilizing their waterfronts to create better quality of life through their economic, social and spatial aspects. Smith and Fagence (1995) state that in an era of increased leisure time, recreational participation, environmental concern and tourism, many waterfront cities have attempted redevelopment and restoration projects. The scope of waterfront development has already expanded not only economically, but also recreationally and environmentally, providing new recreational and social opportunities (Carr, 1992; Breen and Rigby, 1996; Moughtin, 1992; Meyer, 1999; Gastil, 2002) regarding the social benefits by encouraging the use of outdoor spaces and increasing social integration (Coley et al., 1997).

Open space and recreational uses, the inseparable components of waterfronts, are most commonly created as waterfront parks, recreation grounds, sports fields and the like. Even the tradition of waterside parks in example riverside gardens is an old one, dating at least as far back as ancient Babylon (Hudson 1996). Today, one of the influential cases is the 'Madrid Rio' project, which is realized on the banks of the Manzanares River running through Madrid in 2011. This area used to be surrounded by a vehicular road system, which has been replaced by an underground, and the available space has been re-designed as a large-scale

system of green spaces. Also, in New York, the city has opened large portions of the waterfront to the public in recent decades through the creation of new parks and esplanades (New York City Vision 2020, 2011). According to one of the planning strategies, public open spaces on the waterfront can be used to transform neighborhoods and turn previously inaccessible lands into vibrant community gathering areas. This is demonstrated by the Hudson River Park which turned the once-derelict shoreline on the west side of Manhattan into a world-class destination with a greenway, views across the water, a range of recreational opportunities, public piers, a waterfront esplanade, and a limited number of commercial uses. Likewise, the new Brooklyn Bridge Park (Figure 1 and Figure 2), which opened in 2010, became Brooklyn's most significant new park in more than 100 years. Not only has it benefited those who live nearby but it has also become a draw for tourists (New York City Vision 2020, 2011).

Besides, the integration of water source as part of the park design is a critical issue to expand the positive impact of the environment on users that may vary from one place to another, and may be perceived in different ways. A study comparing the usage of urban parks in Turkey and Netherlands found that although water is an important element in all parks, it is used as a decorative rather than a natural element in parks in Turkey whereas in the Netherlands, water is seen as a native element of urban parks (Ak, M., K., Eroğlu, E., Özdede, S. & Kaya, S., 2014). Be the artificial or natural waterfront of a source, should be better to be considered as a part of visual quality, which has strong relation with the quality of urban life.

Another issue is design quality to provide a calm and peaceful environment. In terms of design, the Charleston Waterfront Park in South Carolina, which is one of the initial examples of its time, has a wide green barrier reduces any noise which may interrupt the calmness of the park, especially as it is used by residents for relaxing, running or fishing. As Frej (2004) mentions, before implementation the

Figure 3-4. *Charleston waterfront park. (Photo: Ümit Yılmaz)*

relationship between the park and the water was not clearly defined and the designers decided to build the park up to a level above the water to create a defined edge and visual access to water. The objective was to inject new life to the waterfront and provide a safe and attractive environment that would bring people to the historic downtown area where the park became a part of a wider system for public use. Also, spatial continuity and integration was achieved through the implementation of a master plan for the whole urban area of the Charleston Peninsula (www.sasaki.com/projects).

Since waterfronts shape the natural and artificial boundaries of a city, they may also have disadvantages depending on their distance from central urban areas. In such cases, to ensure the livability of the waterfront parks, it is important that accessibility is provided through the public activities and various public transportation modes. In the case of Charleston Waterfront Park (Figure 3 and Figure 4) comprising five-hectare green space that serves as a transition between the Cooper River and the historic downtown of Charleston that the main design decision was

to ensure accessibility by establishing the strong physical connections between waterfronts and the city (Frej, 2004).

2.1. Problems about design, planning and management of waterfront parks

Green areas and parks have an important public role. They act as binders between a variety of urban spaces, and continuous greenways and strong connections may be considered as indispensable items for accessible waterfronts within a rapidly-growing city. According to the New York City Vision Plan (2011), the greenways along the water are defined as connectors to the water's edge. They also provide recreational movement along the shore by the use of a pathway for non-motorized transportation between the natural and the built spaces. However, it is possible that due to the problems of accessibility, such as insufficient transportation nodes, interrupted physical access and lack of spatial quality, such waterfront parks may become dull spaces with low user density.

According to the Project for Public Spaces (2000), waterfront development mistakes are classified as; single-use developments, domination by automobiles, too much passive space or too much space given to recreation activities, private control rather than public access, lack of destinations, a process driven not by community, and design statements such as stand-alone buildings. When a waterfront is limited to natural areas, recreational activities that use up a large amount of space, such as playing fields, are especially difficult to integrate. Similarly, a lack of crosswalks, poorly-marked entrances and walkways pass along private properties should also be avoided.

During the 90s, the waterfront played an important role in the Boston city center redevelopment strategy. This focused on the development of a system of public facilities and areas connected to the waterfront through a network supported by Olmsted's park system (Meyer, 1999). The strategy was called 'walk to the sea', and consisted of four projects: a civic center; the renovation of several old market halls; an underpass beneath the expressway; and a new waterfront park which Meyer calls the "coping stone" that meets the water as the final layer of the public space system. According to Carr et al. (1992) however the Waterfront Park is the only large space on the Boston waterfront, the location of the park presented a number of obstacles against a strong sense of connection between the park and the city. These are the vehicular roads, which make a physical and visual barrier between the city and the waterfront site. Also, the New Waterfront Hotel, which creates a wall along the south side of the park is another physical and visual barrier. The design of the park also includes separate, not integrated activity areas.

In the case of Boston, given the limited amount of public open space on the waterfront, and the obvious appeal of the water itself, building a physical and symbolic connection to the water was critical. Meyer (1999) criticizes how the design failed to take advantage of the only opportunity to powerfully reconnect the city to the sea. So, waterfront spaces and parks require a specialist approach to their design and management. There might be particular or various reasons behind lack of usage, and these should be carefully studied and evaluated within the framework of the natural, built and socio-cultural dimensions of the city. Before defining the principles that may be employed to draw people back to waterfront parks, issues including continuity, connectivity, variety and environmental quality must be considered in terms of their planning, design and management.

3. The urban characteristics of Istanbul as a waterfront city

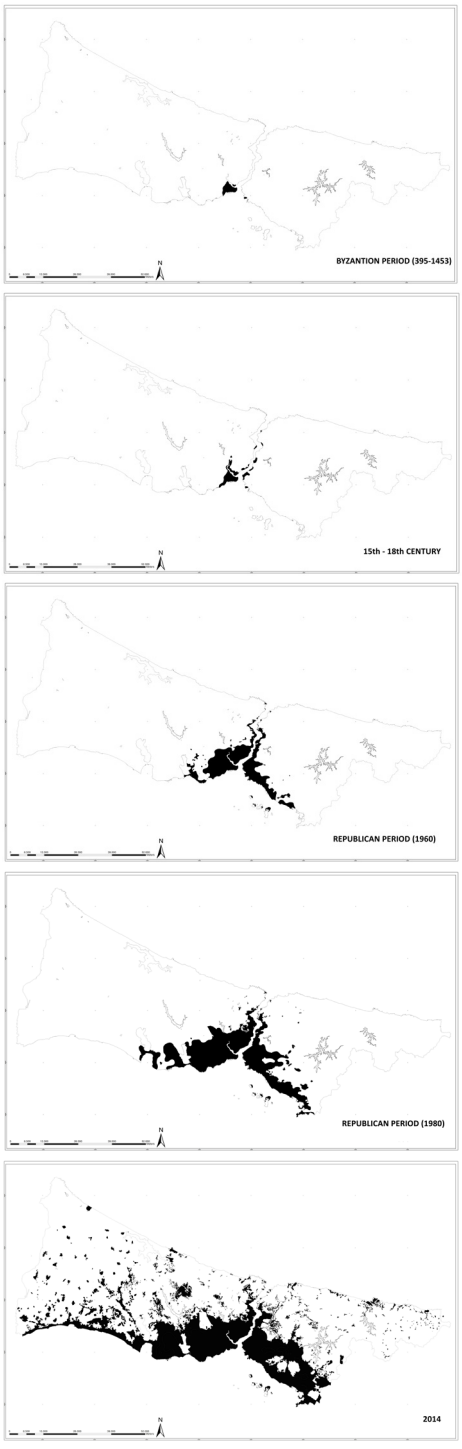
Istanbul is an ancient city with a history that goes back over one thousand five-hundred centuries. Straddling two continents and two seas, this historical waterfront settlement is a highly urbanized metropolitan city, which has been rapidly growing both in the east-west and north-south directions since the 19th century. Today, with its variety of city centers, Istanbul is a steadily growing metropolis.

The first settlement area was the historical peninsula (Map 1). This is locat-

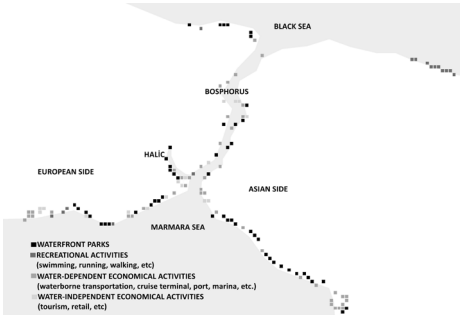
ed at the intersection of three distinctive water spaces, the Marmara Sea, the natural canal of the 'Bosphorus' which connects the Marmara Sea to the Black Sea, and the natural creek of the 'Halic' (Golden Horn). The Bosphorus is an international waterway and an active local transportation corridor, while the Halic is a calm inner harbor. Unlike the limited space and narrow interaction areas along the Bosphorus and Halic waterfronts, the Marmara Seafront, which consists of settlement areas developed during the 80s, is mostly built on vast tracts of reclaimed land.

Throughout history, water has always been the intersection of busy transportation routes, and the waterfronts have always had a great diversity of industrial, commercial, residential and recreational functions. In the 16th century, the historical peninsula became the commercial center due to the ports of the Halic and Galata districts. Wiener (1998) describes the 18th and 19th century waterfronts with shipyards, the arsenal and the harbors around Galata and Halic, the boat repair and small ship maintenance facilities of the villages along the Bosphorus, and the charcoal warehouses and carpenters along the Marmara seafronts. Bilgin (1998) assets the village houses on the north coast of the Bosphorus, the private summer-houses, beaches and sea baths on the Marmara seafronts and their associated neighborhood parks, restaurants and tea gardens as the centers of popular culture and society during the first half of the 20th century.

Unlike the natural coasts to the north, the waterfronts to the south are built up (Map 1,2, 3, 4, 5). The waterfronts were the first areas from which the city was developed and activities such as transportation, production and trade caused these areas to be urbanized. Since the beginning of the 20th century, uncontrolled urbanization has stemmed from unplanned socio-physical developments. These include immigration, unregistered construction activities, privatization, large-scale infrastructure projects, peripheral developments, and rapid growth in the east-west direction. The destruction of natural areas as a result of the spread of built areas to the north, high-speed vehicular roads, insufficient connection nodes or public transportation networks, have brought problems and reduced the quality of urban life. According to Özbay et al. (2014) Istanbul is becoming an enormous heap of structures, and within this fragmentation, working class districts developed on the peripheries, thereby contrasting



Map 1-2-3-4-5: *Periodical development of urbanization in Istanbul (Istanbul Metropolitan Municipality, 2014).*



Map 6: *Major land use of Istanbul waterfronts.*

with the hotels, residences and shopping malls at their centers.

One of the most important determinants of the uncontrolled urbanization in Istanbul is the inward migration that occurred in parallel with its modernization. Continuous inward migration still brings mostly young people from all over the country who are seeking work. As a result of that, income level rates have accumulated at medium and low levels. Starting in late 80s, the existing industry in the city was removed to the peripheries, forming a new urban context. After de-industrialization, the city specialized in the service industry and a white-collar work force was established (Güvenç et al., 2012). The growth in population has brought an accelerated increase in residential areas, shopping malls, hospitals, universities, social facilities and recreational areas which caused the city to spread to the east, west and north.

Today, the Istanbul waterfronts are built up with low rates of natural green areas and parks. According to Özbay and Akbulut (2014), the relationship Istanbul has with nature is the destruction of the natural environment by huge investment projects that have been planned or made recently. Although in recent years, the waterfronts have been losing their natural characteristics more rapidly than in the past, they began to lose their green areas centuries ago, and the most common solution was to use reclaimed land for parks. This can be seen in the major land use map (Map 6) with;

- A series of recreational areas on the waterfronts of the inner parts of the Black sea,
- Recreational functions on the European side of the Marmara seafronts and active green areas on the Asian side, including marinas, industrial docks, waterborne transportation facilities and commercial ports,
- The Bosphorus waterfronts with a number of recreational areas, small-scale natural green areas and fragmented active green areas of parks,
- Small-scale green areas among the dominant commercial functions on the historical peninsula and small-scale maritime uses among the dominant active green areas of parks on the Golden Horn (Halic) waterfronts.

The inaccessibility of green areas to different social groups is an important issue in Istanbul. According to Güvenç et al. (2012), residential areas became isolated due to the middle and upper class decomposition after the 1980s. Gated communities are located close to forests, green areas, lakes and seas, promising a life close to nature and far from the city's crowds, thereby increasing the value of these living spaces. However, the social housing projects built for low and middle income groups are surrounded by limited green areas, which are fenced off, making them inaccessible.

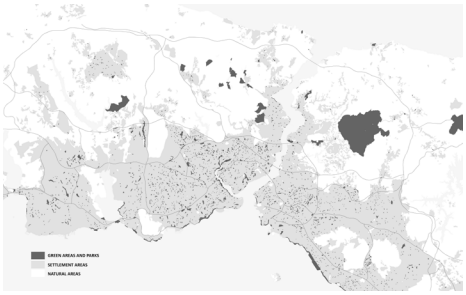
Accessibility is also another problem regarding weak connections by public transportation. Over time, the main connection vehicular roads of the highway bridges were transformed into development axis. Although the city served as a natural harbor with its waterways used for transportation for centuries, the Bosphorus bridges gave priority to private vehicles over public transportation. According to Özbay (2014), rather than the bridges there is a lack of connections between the eastern and western directions in the city wide, and similarly poor connectivity between the Asian and European Marmara seafronts with the dense urban growth and the northern regions where urban growth is underway. This situation is defined by Ozbay as "the immobilization of Istanbul", is a network of streets and railways that do not intersect with each other. Even, the waterborne public transportation of this waterfront city has developed only at specific centers, and is being used only where there are limited transfer connections nearby. (Özbay, 2014).

3. Istanbul waterfront parks

Istanbul has a collection of green areas that includes urban forests, historical woods and gardens, city parks and waterfront parks. These green areas are mostly concentrated in inner-city, rather than on waterfronts (Map 7), which cover 38.760,000 m2 in total (including playgrounds, botanical and recreational areas, historical woods and gardens, city parks and waterfront parks), and waterfront parks account for only 11.475,000 m2. In comparison with the whole green areas, the ratio of %30 for waterfront parks is relatively a considerable high rate but on the other hand a low rate for a city surrounded by water. The Marmara waterfronts are the longest and widest, covering 7.475,000 m2 of green area, and have the highest rates of reclaimed land. In comparison, the Bosphorus waterfront parks occupy 2.850,000 m2 and the Halic waterfront parks occupy 1.150,000 m2. The waterfront parks along the edges of the Bosphorus, Halic and Marmara Sea can be categorized as; reclaimed land for large green areas and parks, walkways and small green parks with playgrounds. The waterfront parks are used for various recreational activities. The research of Koramaz and Turkoglu (2010) on user satisfaction for Istanbul parks found that rates are highest for the Marmara seafronts, and that the lowest are for the Bosphorus waterfront settlements. In addition, satisfaction rates are gradually decreasing in the inner-city areas, which are further away from the water. These findings demonstrate the positive impact of water on user satisfaction and supports the importance of the city's waterfront parks.

Although most of the city parks on the Istanbul waterfronts were established during the 20th century as symbols of modernization, most of the active green areas (historical woods and gardens, city parks, waterfront parks, etc.) date back to 19th century. The 1930s saw a rise in the number of beaches and the development of waterfront 'city parks', the most famous being Fenerbahçe and Bebek (Figure 5 and Figure 6).

In relation to unplanned urban sprawl, rapid population growth is regarded as a negative environmental impact because of an inability to provide enough green space per capita and the overwhelming of health services, education opportunities and public



Map 7: *Green areas and parks in Istanbul (Istanbul Metropolitan Municipality, 2017).*

Figure 5-6: *Aerial view of Marmara seafront and bosphorus waterfront.*
(Photo: Handan Türkoğlu)

Figure 7-8: *Lack of user density at waterfront parks in Istanbul. (Photo: Tunca Güzeloğlu)*

transportation (Özbay, 2014). During the 80s and 90s, due to declining urban life quality, establishment of new parks and recreational green areas on the Halic and Marmara waterfronts became important tools by which to improve life quality in Istanbul. On the other hand, the development of vehicular roads parallel to the waterfront parks was totally opposing to the positive impacts of these relaxation areas. Kuban (1998) states that the negative impacts of spatial changes are related to the destruction of green spaces, the construction of vehicular bridges over Bosphorus, the development of summer-houses along the waterfronts and the collapse of residential structures on the ridge overlooking the Bosphorus. Additionally, Bilgin (1998) assets that the reclaimed lands of horizontal vehicular roads that run parallel to the Bosphorus, the busy maritime transit circulation, and the unhealthy quality of the water has spoiled specifically the Bosphorus waterfronts for public use.

On the Marmara waterfront, reclaimed land has been used to make parks that have become huge passive green areas due to their difficult access. Besides their poor design quality, usage rates of waterfront parks may be negatively affected by the lack of a strong relationship between the parks and the water, insufficient green elements, the presence of nearby vehicular roads, weak public transportation and poor pedestrian connections, and interrupted relation between open spaces along the waterfront (Figure 7 and Figure 8).

4. Case study: A research on Istanbul waterfront parks

4.1. Methodology

The purpose of the research is first, to contribute to the Strategic Plan and to determine the development strategy of residential areas in both physical (objective) and perceptive (subjective) terms, and second, to determine the spatial criteria for residential areas. The database was designed for two different research studies: one measures physical quality of neighborhoods, and the other measures the quality of life of residents (Türkoğlu, H.; Bölen F., Baran Korça P., Terzi F., 2011).

To identify the appropriate neighborhoods and select the clusters, a formula for density and land value was implemented (Map 8 and Map 9). Initially, a total of 740 neighborhoods were identified across Istanbul. These neighborhoods were then divided into 9 sub categories and analyzed according to the number of housing units and the number of buildings containing housing units. Within each category, 100 points were identified, totaling 900 points. The 900 points were then used in two areas of research: A physical survey and a QoL survey. The physical survey utilized the whole 900 points whereas the QoL survey used 423 points (Map 4). A minimum of 25 households were identified and registered for the 423 points, and were grouped into clusters. From these 25 households, 6 were randomly selected for interview (Türkoğlu, H.; Bölen F., Baran Korça P., Terzi F., 2011).

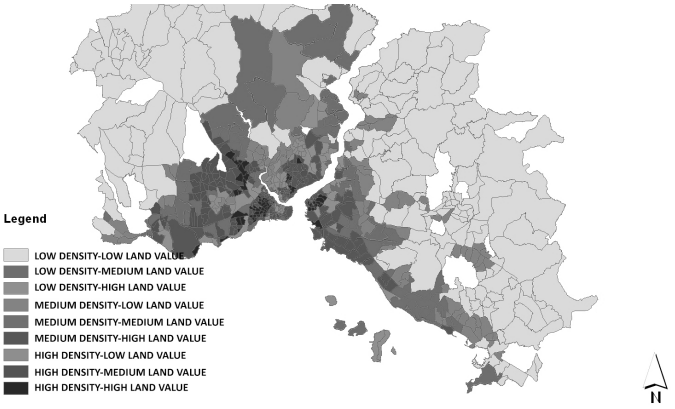
The survey was carried out in the autumn of 2005. 1635 households out of the 423 clusters with adult respondents (18 years of age and older) who were permanently resident in Istanbul were selected for face-to-face questionnaire interviews. The response rate was 65%. The information that was gathered included housing and demographic characteristics, land use characteristics, and other characteristics of the community. The questions consisted of different subjects such as public services and transportation, recreation areas and park usage, the neighborhood

and neighbors, safety, work and shopping, educational and health facilities (Türkoğlu, H.; Bölen F., Baran Korça P., Terzi F., 2011).

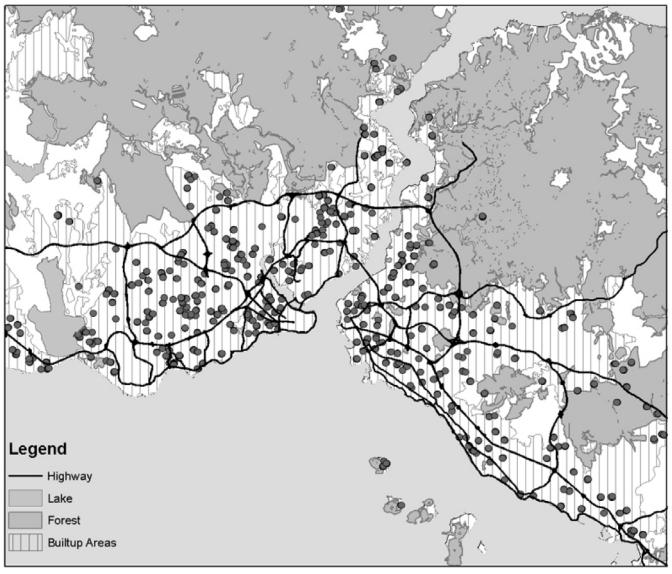
The indicators for recreation and parks determined in the research were:

- Overall satisfaction with parks and recreational facilities
- How often parks were visited
- Usage of park space
- Importance of access to parks
- User characteristics

The respondents were asked to choose from a list of parks that they had already visited. These were then examined according to three categories: historical woods and gardens, waterfront parks, and city parks. The results of this paper are based on the given data of this research for the indicators for recreation and parks.



Map 8: *Density and land value categories according to neighborhood (mahalle) groups.*



Map 9: *Location of clusters.*

4.2. Results and discussion

The results demonstrate that waterfront parks are preferred less than other types. The most preferred were urban parks and historical woods and gardens with the ratio of %61, while waterfront parks were preferred by 37%. As seen in Table 1, the most preferred waterfront parks are those on the Marmara and the Bophorus waterfronts with the ratio of 26%. Although the high preference rates for the historical woods and gardens demonstrate a balanced ratio among the choices, the same situation is not valid for the waterfront parks. For instance, Fenerbahçe Park, which is one of the most significant ones on the Marmara waterfront, is easily the most preferred.

This research is intended to investigate the relationship between the preferences and the characteristics of Istanbul waterfront park users according to their residential location, income level, age and family status. The 64% of the waterfront park users live on the European Side and the 36% of them live on the Anatolian Side. For all respondents, the Marmara waterfront parks are the most preferred (55%), and the least preferred are the Bosphorus parks (19%) (Table 2). Supporting this result user locations along the Bosphorus are decreasing in relation to preference rates (Map 10). The respondents living on the European Side prefer the Marmara waterfront parks with the ratio of 50%, followed by the Halic parks by 33%. Bosphorus parks have the lowest ratio of 18%. Respondents living on the Anatolian Side prefer the Marmara waterfront parks with the ratio of 66%, followed by Bosphorus parks by 23% and Halic parks by 12% (Map 10 and Map 11).

In summary;

- For respondents living on the European Side of Istanbul, the first preference is for Marmara waterfront parks (the biggest park area) and the second preference is for those on the Halic (the smallest park area).
- For respondents living on the Anatolian Side of Istanbul, the first preference is for Marmara waterfront parks and the second preference is for those on the Bosphorus.

Table 1. *Ratio of park visits and categories (percentage distribution) **Historical woods and gardens are mostly belongs to Ottoman period, in the past these semi-public areas partially covered with trees and the area consists of different types of gardens.*

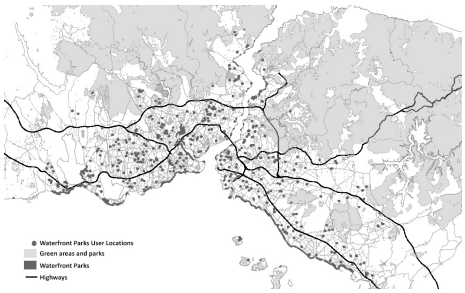
Urban Park Categories	%	Urban Parks	%
**Historical Woods and Gardens	61	Gulhane Park	16
		Camlica Wood	15
		Yildiz Park	12
		Emirgan Wood	10
		Fethi Pasa Wood	8
Waterfront Parks	37	Halic Waterfront Parks	10
		Marmara Seafront Parks	
		Bosphorus Waterfront Parks	26
City Parks	2	Other	2
Total	100	Total	100

Table 2. *Ratio of waterfront parks preference-users living on the european and the anatolian side (percentage distribution).*

Waterfront Parks	Total	Users Living On The European Side	Users Living On The Anatolian Side
Bosphorus	19	18	22
Marmara	55	50	66
Halic	26	32	12
Total	100	100	100
Interview numbers	719	441	278

A spatial analysis of the results is shown as a distribution of user locations in Map 10. It is a critical finding that the distribution of user locations is random, rather than accumulated on specific spaces, and that the highest rates of preferences are for the Marmara waterfront parks, which covers the biggest amount of green area on the waterfronts. This information shows that the users visit the parks, who reside among various parts of Istanbul, but mostly the respondents from inner-city areas prefer the Marmara waterfront parks.

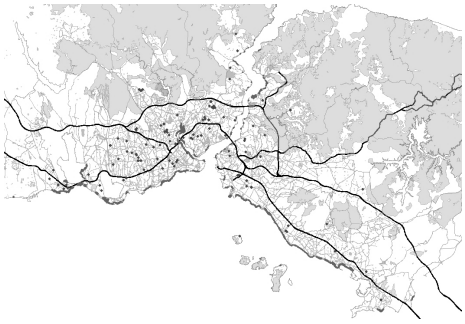
Maps 11, 12 and 13 show the distribution of Marmara, Halic and Bosphorus user locations separately. The users of the Marmara seafront parks are concentrated all over Istanbul, while Halic users are spread more over inner-city areas and Bosphorus parks user locations are spread over its inland areas. It is clear that in contrast with the users of the Marmara seafront parks who comes from all over the city, Bosphorus parks preferred more by its residents.



Map 10: *Spatial distribution of waterfront parks' user locations in Istanbul metropolitan area*

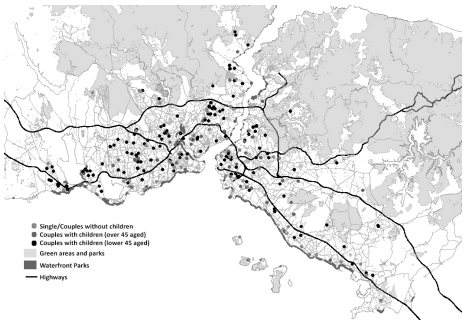
Map 11: *Marmara waterfront parks' user locations.*

Map 12: *Bosphorus waterfront parks' user locations.*

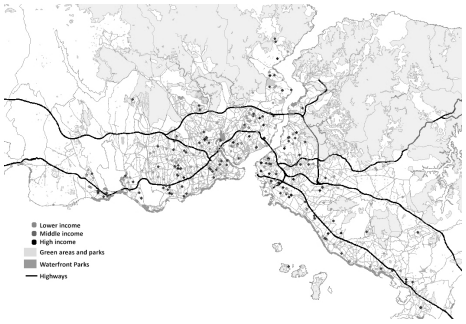


Map 13: *Halic waterfrontparks' user locations.*

Maps 14 and Map 15 also highlight the life cycle and income rates of the waterfront park users at the given locations. In map 14, most of the locations in black are married couples younger than 45 years old with young children,



Map 14: *Spatial distribution of life cycling of users.*



Map 15: *Spatial distribution of user income*

which projects a random distribution among user locations in Istanbul. Elderly (65 and older) users are the least common. Since waterfront parks are preferred by young families, this result assets that the parks are inaccessible for the elderly. As seen in map 15, user locations demonstrate a density of medium-income and low-income levels more than high-income, which demonstrates that the waterfront parks users are from various income levels. However, it is a critical finding that users with medium-income prefer waterfront parks the most and the users with high-income prefer them the least. Apart from the preference rates of socio-economic profiles, inevitably all users are facing accessibility difficulties for waterfront parks.

5. Conclusion

The waterfronts are valuable urban spaces and parks are essential to urban waterfronts to enhance the quality of life. Opening large portions of waterfront to the public use with parks and providing communal areas for a range of recreational activities may transform urban life in a positive way. A strong visual and physical connection between water, park and the city contribute also to the urban image. In this case, the waterfront parks should be handled with a sensitive approach in terms of their planning, design and relation with the rest of the city.

Istanbul is an historical water edge city where urbanization has developed from its waterfronts. Although the waterfront parks of this water edge city count for a reasonable amount of area, they are the least preferred in comparison with the green areas and parks all over the city. This demonstrates that they don't reach to the expected user density. Although the most preferred waterfront parks are located on the Marmara waterfronts, they are not accessible to various demographic groups. Considering the low preference rates in terms of user density and profiles, it might be assumed that this is a result of the weak physical connections and public transportation, unattractive spatial and visual quality of design, insufficient green and natural elements, lack of visual connections with water and physical connections between the waterfront open spaces, lack of surprising water-related recreational activities, existence of barriers such as vehicular roads and inaccessibility, vast passive green areas without activities and gathering spaces for communal life, bad water quality, lack of maintenance for parks and its elements. Consequently, several recommendations to attract people to waterfront parks and provide a better quality of life are given below:

- A citywide project regarding the Istanbul waterfronts is needed for a sustainable development of its public spaces and parks, where participation is an important issue during the whole process in order to allow the consideration of a variety of user requirements.
- Poor public transportation connections should be reconsidered in relation to the citywide planning of Istanbul. This, together with pedestrian movement and waterborne transportation, should be increased as a part of a wider network.
- The Marmara, Bosphorus and Halic waterfront parks should be developed, both in relation to their unique socio-economical context, their geographical characteristics

and their role in quality of life.
- Physical and visual barriers such as vehicular roads running nearby parks should be avoided. This is especially important for the Halic and Bosphorus waterfronts, which are less preferred.
- Design quality and management should aim to provide both visual and physical comfort through landscape design and its relation to the water source.
- Attractive spatial and functional solutions are essential. These should consider introducing water-related activities, providing strong visual relation with water, supporting commercial-leisure functions, enabling a variety of recreational activities and also calmer environments.

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